2011 Military Health System Conference

How IHI Promotes Learning Systems and Knowledge Management

The Quadruple Aim: Working Together, Achieving Success

Carol Beasley, Institute for Healthcare Improvement, Cambridge, MA

January 26, 2011

Agenda

- A few words about IHI
- Learning strategies tied to stage of design
- Examples:
  - Pilot testing
  - Collaborative learning
  - Scale-up and spread
- Questions and discussion

Our Goals Are…

The IOM's Six Aims for the Health Care System:

- *Safe* – no needless deaths
- *Effective* – no needless pain or suffering
- *Patient-Centered* – no helplessness in those served or serving
- *Timely* – no unwanted waiting
- *Efficient* – no waste
- *Equitable* – for all

We Do This By…

- Building the Will for Change
- Cultivate Promising Improvement Ideas
- Putting those ideas into action through effective Execution

Some of Our Groundbreaking Initiatives Are…

- 100,000 Lives / 5 Million Lives Campaigns
- IHI Open School for Health Professions
- The Triple Aim
- The Improvement Map & Passport
- STAAR (STate Action on Avoidable Rehospitalizations)
- TCAB (Transforming Care at the Bedside)
- Safer Patients Initiative (UK)
- Scottish Patient Safety Programme
- Chronic Care Initiative (Indian Health Service)
- How Do They Do That?
- WIHI

IHI CORE APPROACH

Model for Improvement

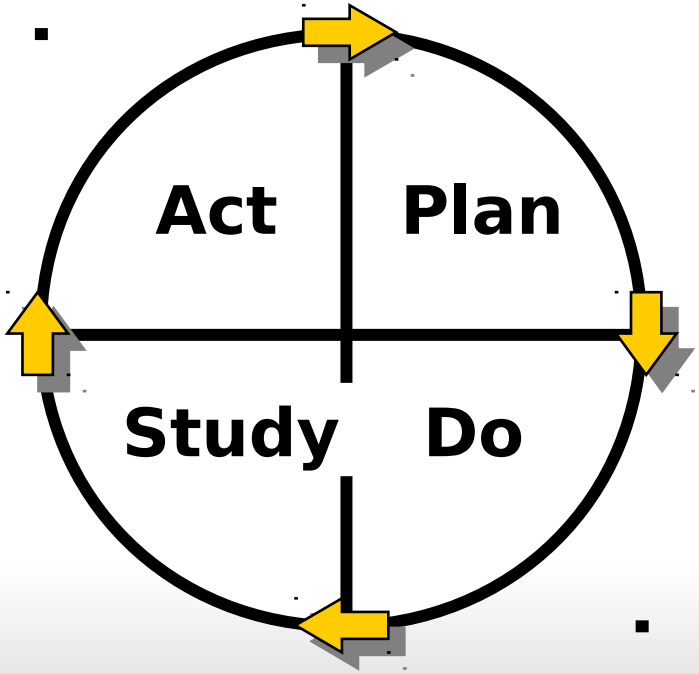
What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

Also known as:

- Shewhart Cycle
- Deming Cycle
- Learning and Improvement Cycle



FROM PROTOTYPE TO SCALE

Where Should a Project Start?

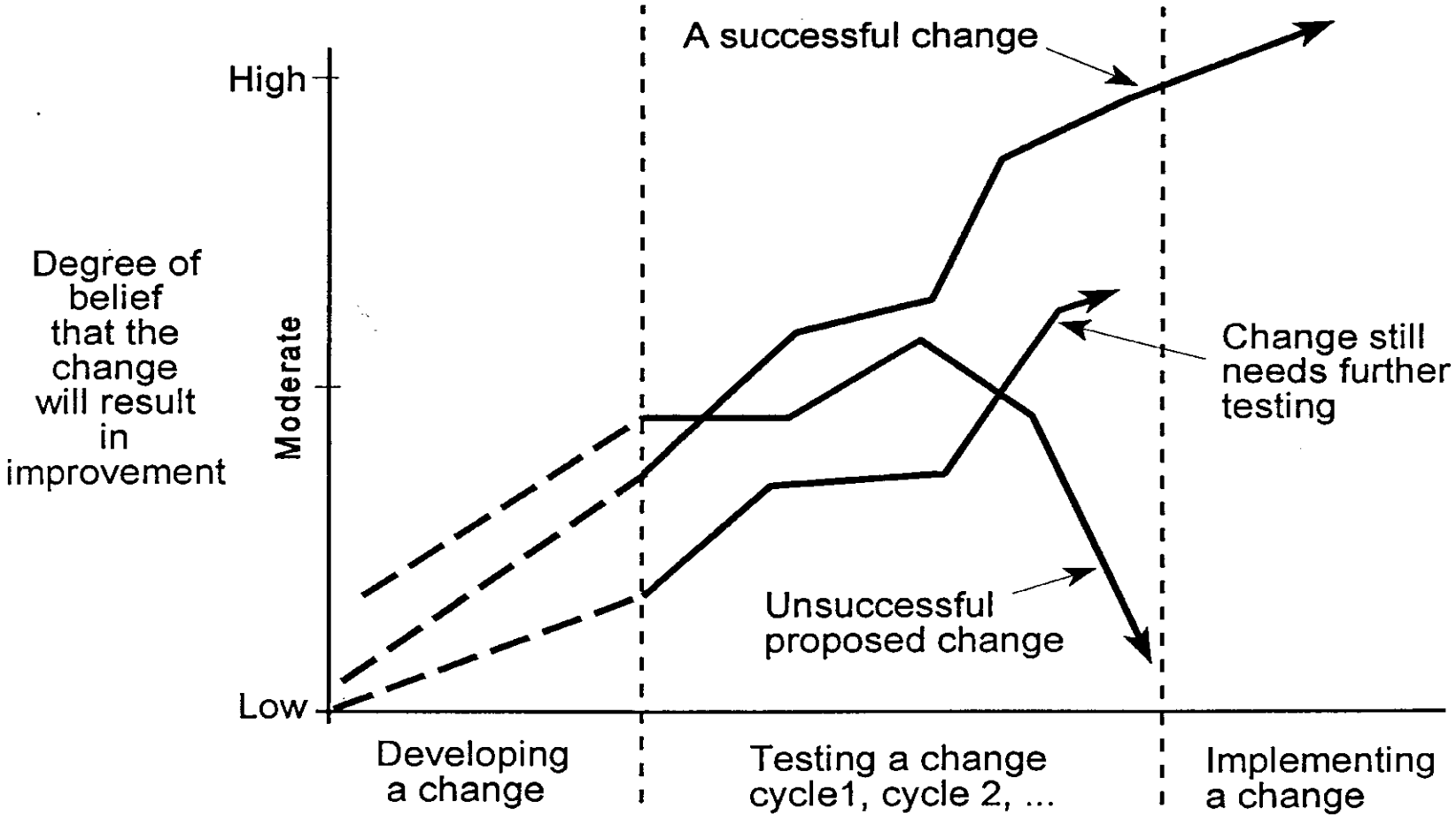
- Do we have design targets?
- Do we have ideas that will achieve these design targets?
- What is our degree of belief that these ideas will give us the desired results?

High degree of belief → adapt and spread ideas

Moderate degree of belief → test promising ideas

Low degree of belief → generate new ideas

Degree of Belief that Changes Will Result in Improvement

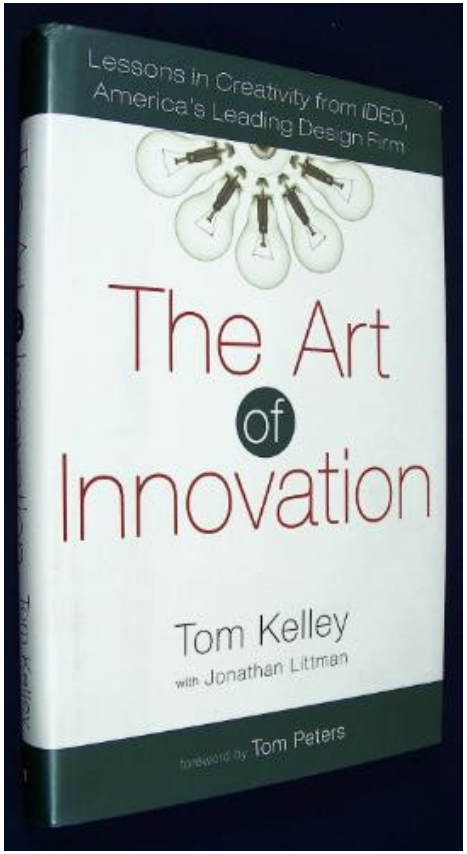


The Improvement Guide, page 97

Methods for Generating New Ideas

- Change Concepts
- Using Technology
- Critical Thinking
- IDEO Brainstorming
- Metaphorical Thinking
- Observation
- Provocation
- Prototyping
- Idealized Design

Innovation and Work Redesign



http://theartofinnovation.com/purchase.htm

IDEO

Change Concepts

(The Improvement Guide, p. 293-359).

A. Eliminate Waste
B. Improve Work Flow
C. Optimize Inventory
D. Change the Work Environment
E. Enhance the Producer/Customer Relationship
F. Manage Time
G. Manage Variation
H. Design Systems to Avoid Mistakes
I. Focus on a Product/Service

Moving from Concepts to Ideas

Conceptual, Vague, Strategic

Specific Ideas, Actionable

Improve

Redesign process

Move steps in the process closer together

Move order receipt and warehouse closer together

Move the fax that receives orders into the warehouse

Write a work order to have the fax moved on Monday

Moving from Concepts to Ideas

Conceptual, Vague, Strategic

Specific Ideas, Actionable

Improve process to reduce anxiety

Give patients and families access to information

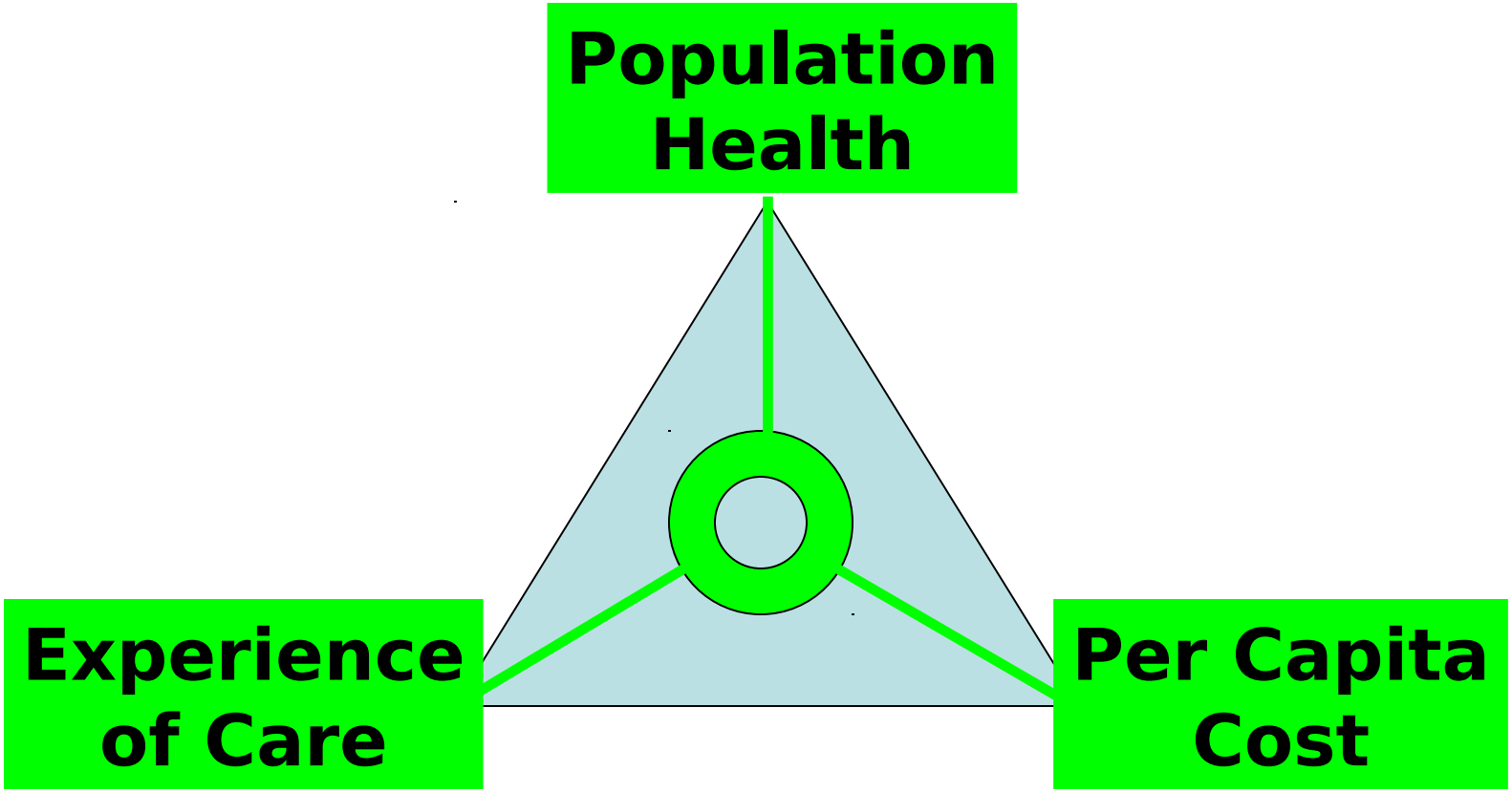
Use beepers for family and friends waiting

Make beepers available to families of all surgery patients next week.

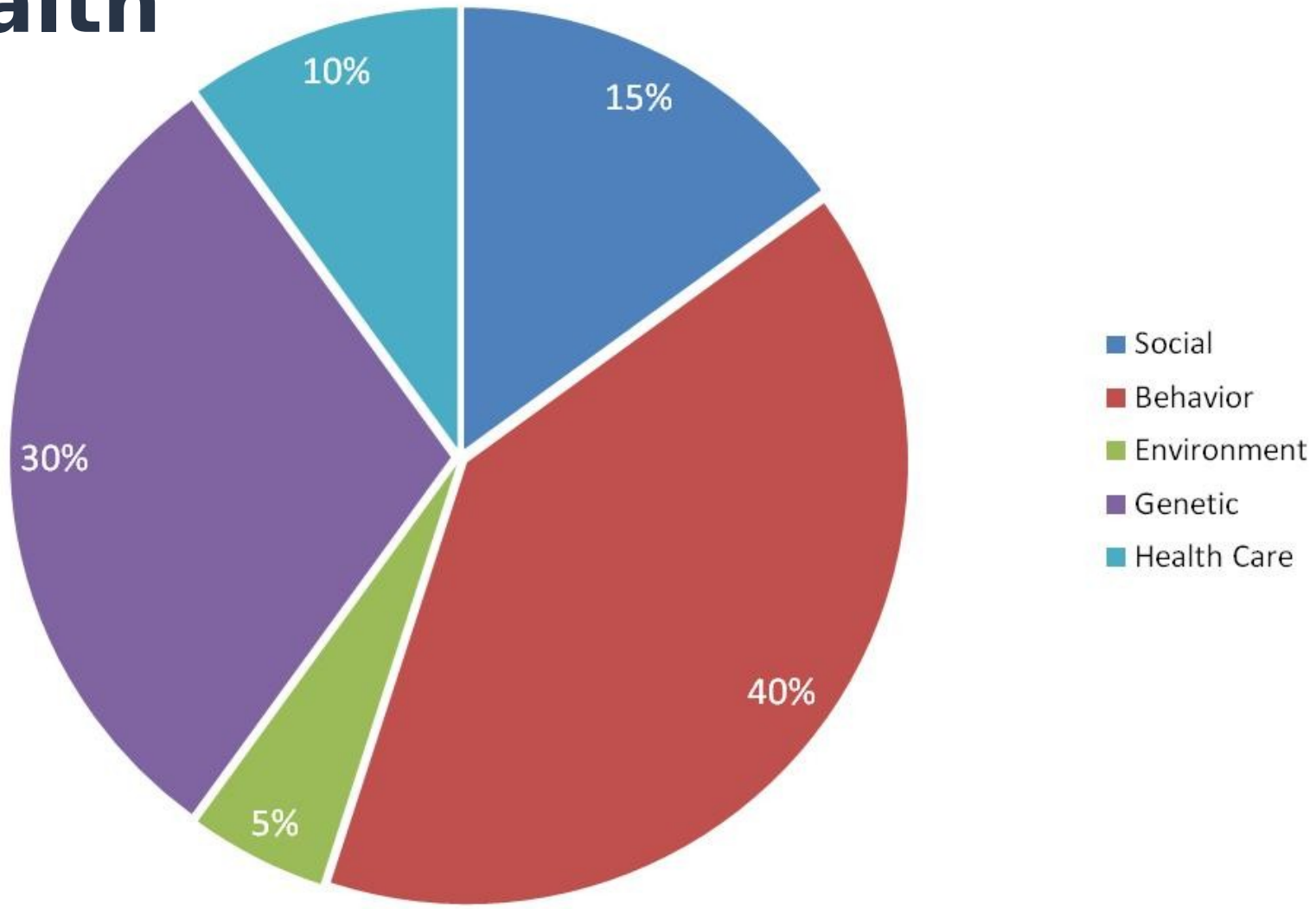
	Building Will	Developing Ideas	Execution
R&D / Prototype Phase		**Concept Design / Driver Diagram, Diagnostic Tools, Measures & Design Targets, Prototype Testing Plan**	
Early Pilot Testing Phase	**New Concepts and Innovative Ideas: focus on building will in the innovators and early adopters (need 8 to 10 sites/orgs)**	**Promising Change Ideas (to reach the Aim / Design Targets)**	**Testing Components of the Concept Design and Testing Clusters of Components (may need more R&D)**
Pilot Testing Phase	**Promising Results: focus on building will of the early adopters (need 25 to 50 sites/orgs)**	**Change Packages & Measures**	**Collaborative Learning (testing under a variety of conditions)**
Spread Phase	**Success Stories: focus on will of the early adopters and early majority**	**How-to Guides & Protocols**	**Collaborative Learning (BTS Model),Spread Model, Scale-up Model, Campaign Model**
Full Scale	**Policies and Regulations: focus on building will for the late majority**	**How-to Guides & Protocols**	**Policies, Regulations and Payment Reform + Spread Resources and Models**

PILOT TESTING AND LEARNING SYSTEM

Three Dimensions of Value

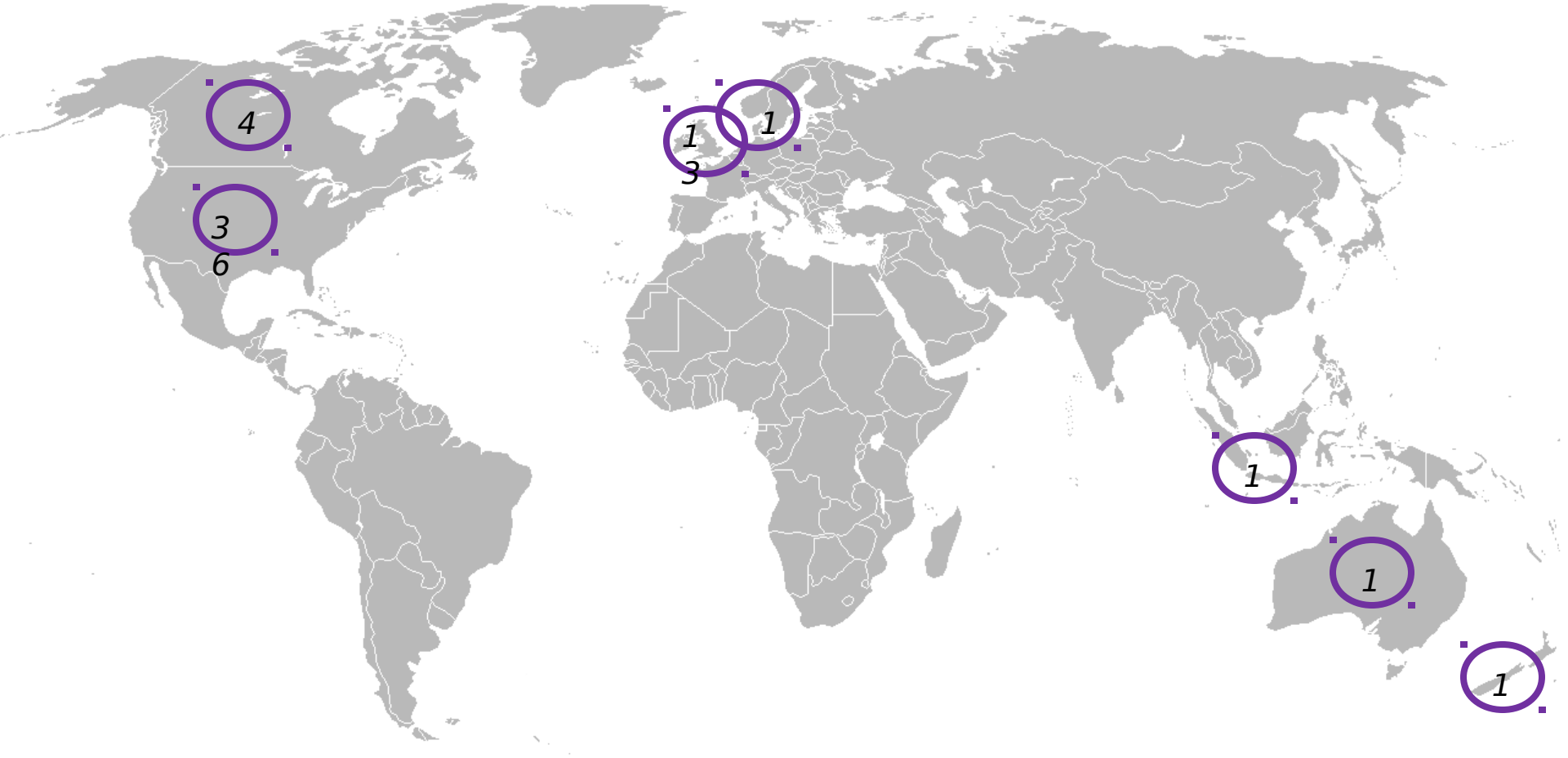


Leading Determinants of Health



Source: McGinnis , JM et al Health Affairs Apr2002

Triple Aim Prototyping Sites



North American Triple Aim Prototyping Sites

- **Health Plans**
  - Blue Cross Blue Shield of Michigan (MI)
  - CareOregon (OR)
  - Essence Healthcare (MO)
  - Capital Health Plan
- **Integrated Delivery Systems (w/ Health Plans)**
  - HealthPartners (MN)
  - Martin's Point Health Care (ME)
  - Presbyterian Healthcare (NM)
  - Southcentral Foundation (AK)
  - Vanguard Health System
  - Wellstar Health System (GA)
- **Public Health Department**
  - *Pueblo Health Department (CO)
- **Social Services**
  - Common Ground (NY)
- **State Initiative**
  - Vermont Blueprint for Health (VT)
- **Regional Partner**
  - Cedar Rapids, Iowa
  - Michigan Health Information Alliance
- **Independent Physician Association**
  - Taconic IPA (NY)
- **Employers/Businesses**
  - QuadGraphics/QuadMed (WI)
- **Integrated Delivery Systems (w/o Health Plans)**
  - Allegiance Health (MI)
  - Bellin Health (WI)
  - Caldwell Memorial Hospital (NC)
  - CaroMont Health System (NC)
  - Cape Fear Valley (NC)
  - Cincinnati Children's Hospital Medical Center (OH)
  - Erlanger Health System (TN)
  - Fort Healthcare (WI)
  - Genesys Health (MI) (Ascension)
  - *Palmetto Health (South Carolina)
  - St. Charles Health System (formerly Cascade) (OR)
  - *Sinai Health System (IL)
- **Safety Net**
  - Contra Costa Health Services (CA)
  - Health Improvement Partnership of Santa Cruz County (CA)
  - Hidalgo Medical Services (NM)
  - North Colorado Health Alliance (CO)
  - Primary Care Coalition Montgomery County (MD)
  - Queens Health Network (NY)
  - Regional Primary Care Coalition (MD)
- **Canada**
  - Central East Local Health Integration Network (LHIN)
  - Hamilton Niagara Haldibrand Brant (LHIN)
  - Saskatchewan Ministry of Health
  - British Columbia Partners

Components of a Learning System for Pilot Testing

1. System level aims and measures
2. Explicit theory or rationale for system changes
3. Segmentation of the population
4. Use informative cases: “Act for the individual learn for the population”
5. Learn by testing changes sequentially
6. Learning during scale-up and spread
7. Periodic review

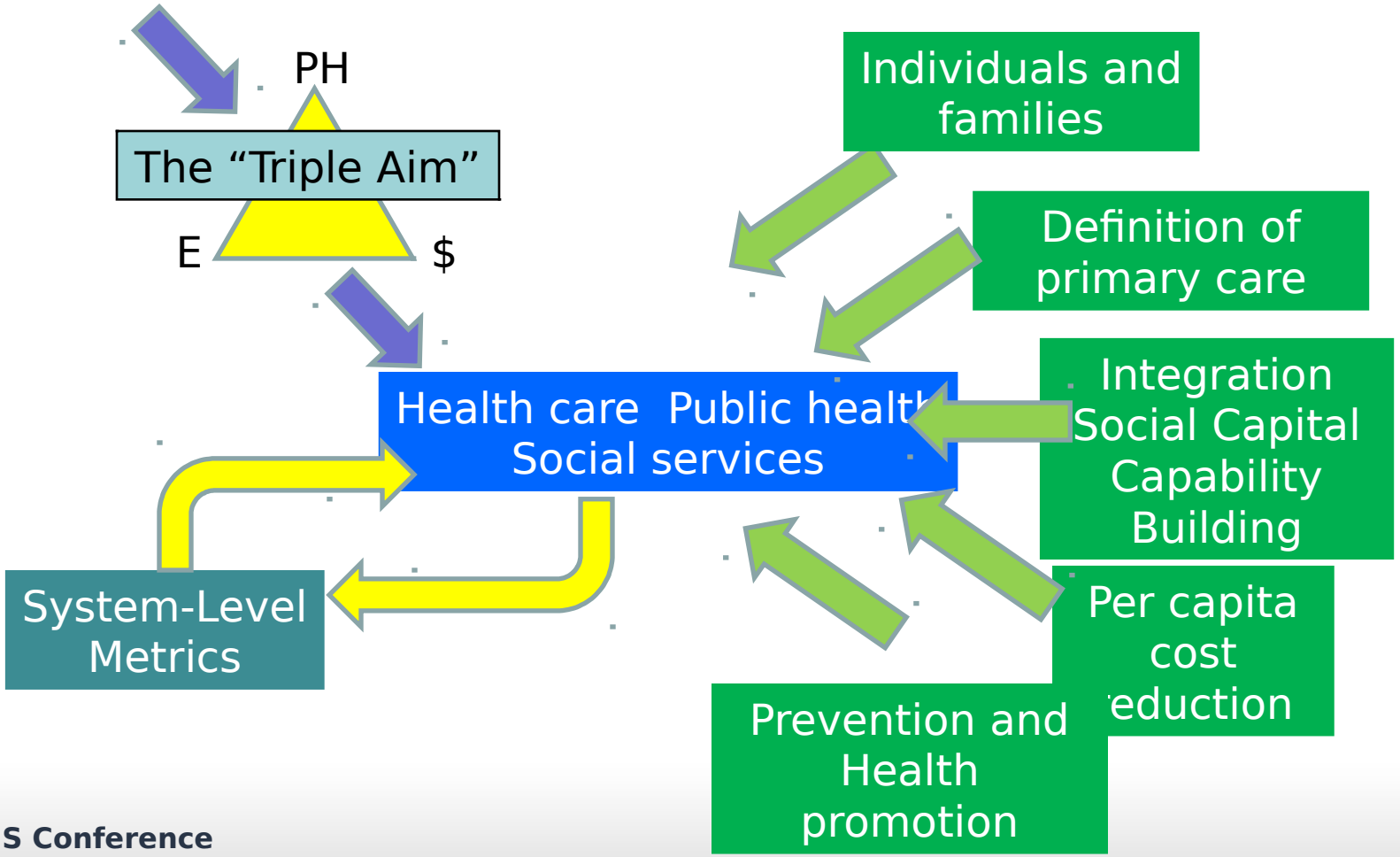
From Tom Nolan PhD, IHI

Potential Triple Aim Outcome Measures 11/09

Dimension	Measure
Population Health	1. Health/Functional Status: single-question (e.g. from CDC HRQOL-4) or multi-domain (e.g. SF-12, EuroQol)
	2. Risk Status: composite health risk appraisal (HRA) score
	3. Disease Burden: Incidence (yearly rate of onset, avg. age of onset) and/or prevalence of major chronic conditions; summary of predictive model scores
	4. Mortality: life expectancy; years of potential life lost; standardized mortality rates. *Note: Healthy Life Expectancy (HLE) combines life expectancy and health status into a single measure, reflecting remaining years of life in good health. See http://reves.site.ined.fr/en/DFLE/definition/*
Patient Experience	1. Standard questions from patient surveys, for example: -Global questions from US CAHPS or How's Your Health surveys -Experience questions from NHS World Class Commissioning or CareQuality Commission -Likelihood to recommend
	2. Set of measures based on key dimensions (e.g., US IOM Quality Chasm aims: Safe, Effective, Timely, Efficient, Equitable and Patient-centered)
Per Capita Cost	1. Total cost per member of the population per month
	2. Hospital and ED utilization rate

Design of a Triple Aim Enterprise

Define “Quality” from the perspective of an individual member of a defined population



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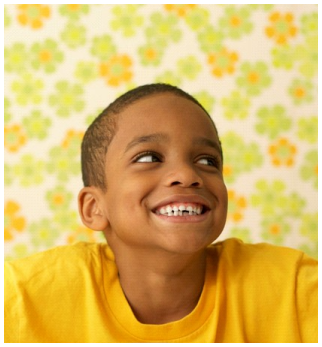

Frank

Frank is a 79 year old widower with Chronic Obstructive Pulmonary Disease (COPD), Heart Failure, and Diabetes. He lives alone. Frank is very anxious as he is often very breathless and feels unable to manage. He has phoned the practice of his primary care physician on several occasions requesting a home visit and over the last year he has frequently been taken to the local emergency department, after he has dialed 911. He has been admitted to hospital on 7 occasions in the last year and now keeps a small packed suitcase by his chair.

Frank's Diagnosis

- COPD
- CHF
- Diabetes

- Frank's Healthcare providers
  - Primary Care, Cardiologist, Pulmonologist, Endocrinologist, Nutritionist, Physical Therapist, Pharmacist, Home Health.

Another View of Frank

- Primary Diagnosis
  - Anxiety, loneliness/isolation, insecurity, confusion, dependency, lack of confidence
- Secondary Diagnosis
  - COPD, CHF, Diabetes
- Primary interventions
  - Personal care coordination, integration of care by PCP team, determination of motivators, behavioral based motivational interventions, consolidation of meds/therapies

Sub population	Primary care	Role of patients & families	Cost control	Prevention and health promotion	Integration Micro &Macro
Robust	1.Everyone attached to PCP 2.Early warning system for change in category for patients	Implementation of programs that promote social gatherings for individuals with similar age, etc.	Early discharge planning	1.Flu/Influenza-H1N1 Programs 2.Silver Sneakers	Shared Care FP's and Psych Specialists
Major Chronic Condition	1.Registries with use of chronic care model 2.Up-skilling of primary care around geriatrics 3.Planned care around specific goals	1.Chronic disease self management training program 2.Family Caregiver Training 3.Social network assessment and support system	1.Medication Management-Therapeutic pharmacy intervention 2.Project At Home'-hospital level care delivered in home	Home safety survey	1.Medication reconciliation 2.Community Health team 3. Post discharge follow up calls
Advanced Illness (Chronic disease plus organ failure)	1.Transitions Programs 2.Complex Case Management/High Risk 3.Palliative Care Programs 4.Geriatric Assessment Units at Hospital and at Home	1.Respite Care 2.The patient never visits health care alone	Long term care-lowest care level assessment through social work	1.Registry of home-bound elders to access them for public health campaigns (i.e.. vaccination) and emergency situations 2. Support for staying in the home if desired	1.Coordination of specialty care 2.Coordination of roles of long term care, hospital, HHA and family
Severe Frailty or End of Life	1.Home based multidisciplinary primary care including; SNF, ALF, Foster Care 2.Comprehensive palliative care-	Reimbursement for family members who care for this group			EOL Liverpool Care Pathway-Identify patient in acute setting to ensure 'appropriate' patient centered care

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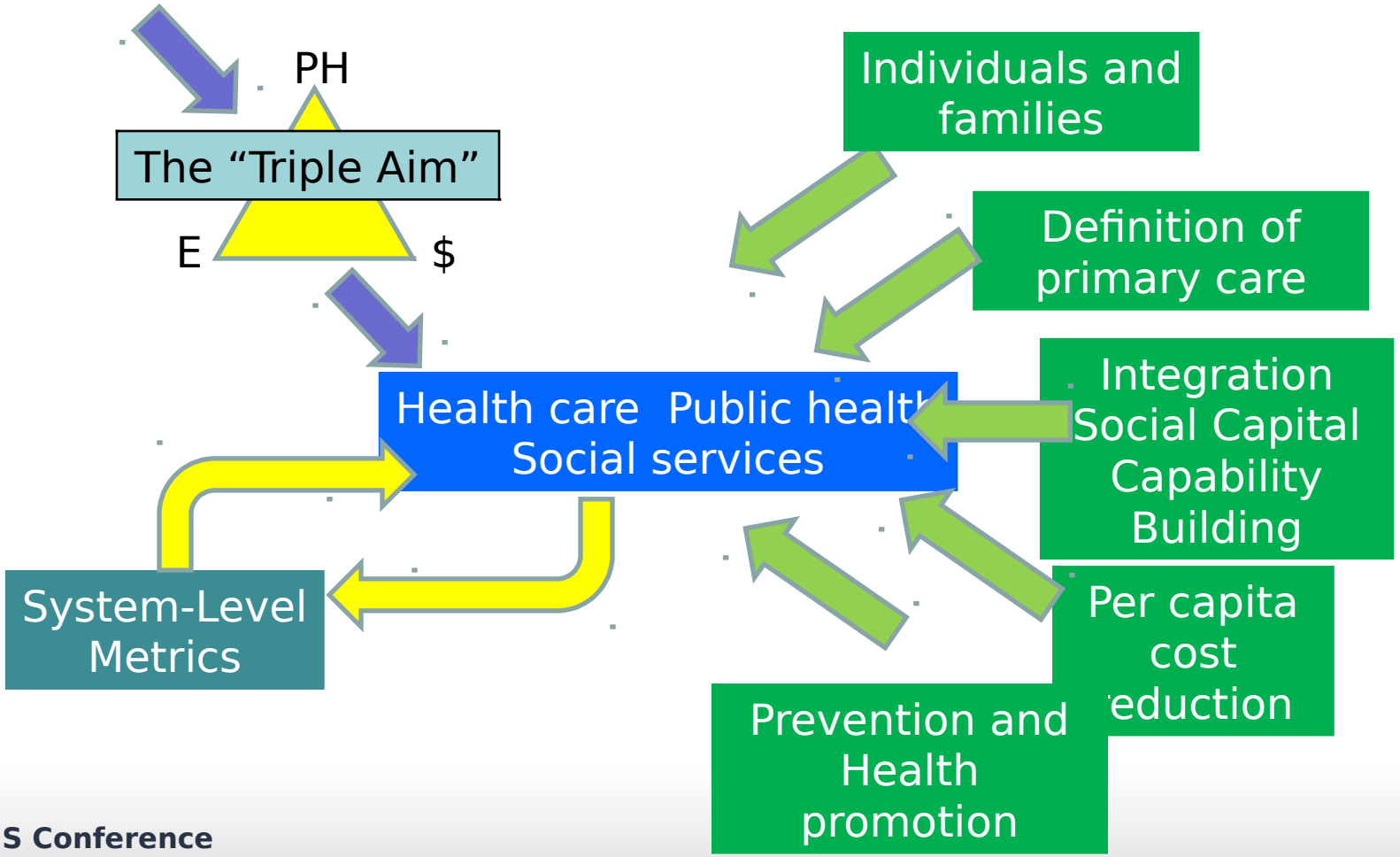


Workgroups 2007-2011

INDIVIDUALS AND FAMILIES

- Children and Families
- Employed Population
- Individuals 65+
- Socially Complex
- Patient and Family Experiences
- Maximizing long term health for children

PRIMARY CARE

- Co-creation of health
- Medical Home and Primary Care Redesign
- Primary care 3.0

Workgroups 2007-2011

SYSTEM INTEGRATION

- Community Systems of Care: ACOs and the Triple Aim
- Regional Health Improvement Initiatives
- Applying the Triple Aim to a Region
- Regional Information Technology (IT)

PER CAPITA COST REDUCTION

- Specialty Waste and Overuse
- No New Money
- Reducing Clinical Variation
- Delivering within a 15% Cost Savings
- Ambulatory care sensitive conditions

Workgroups 2007-2011

PREVENTION AND HEALTH PROMOTION

- Population Health Management
- Prevention & Health Promotion, including Social Marketing
- Successful Coalitions and Population Health

CAPABILITY BUILDING

- Predictive Modeling
- Measurement
- Execution and the Triple Aim

HealthPartners

Topics

Diabetes

Cancer

PPP

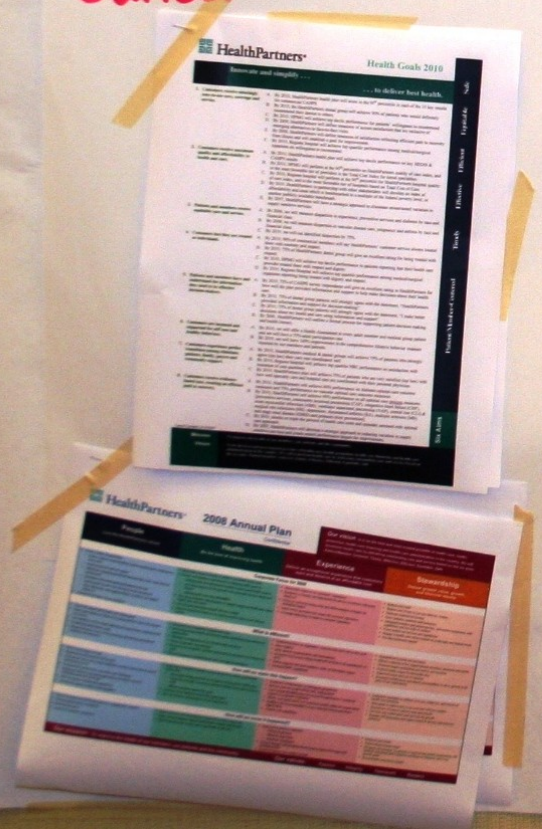
Community
4.5 million
↳ Plan
730,000
↳ Plan/HPMG
320,000

Measures

1. Per capita cost/ pmpm
2. Equitable care
   - economic
   - race
3. Experience
4. Health
   - Diabetes - optimal care
   - Cancer - tbd

Interventions

- Exception reporting & follow-up
- Care Model Process (CMP)
- 10 case review & follow-up
- Community outreach/ communication
- Diabetes Inertia Project
- CMP
- EMR module (customize with stage & tumor size)
- Disease Management Program
- 10 case review
- Case Management

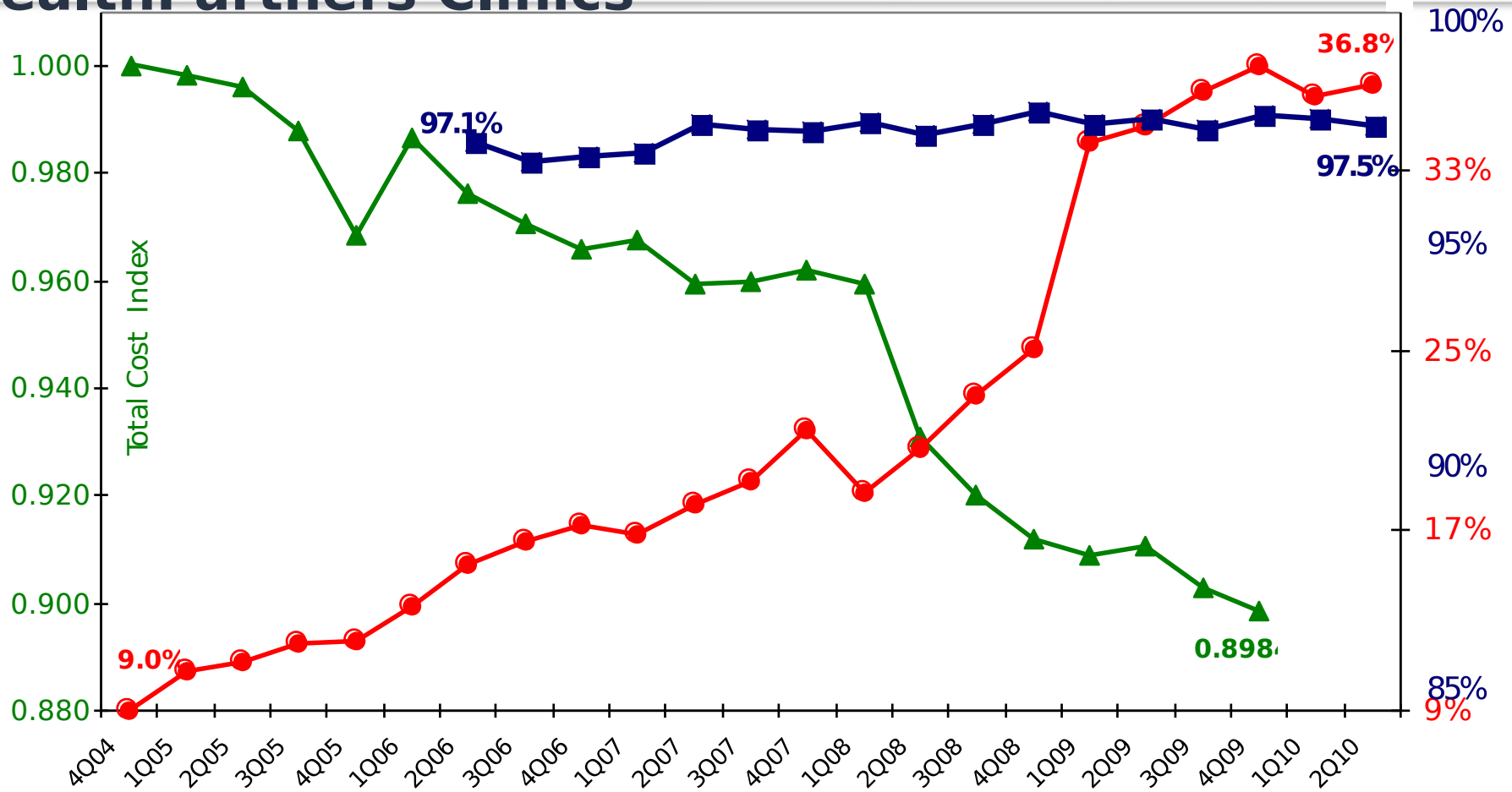


Partners for Better Health Goals 2014

Health Success	Experience Success	Affordability Success
Improved health for our customers and community as measured by: •Better well being, more satisfied and healthy lives. •The best local and national health outcomes and the best performing health care costs in the region.	**Deliver an exceptional experience that customers want and deserve at an affordable cost as measured by:** •The best performance on customer's willingness to recommend our clinics, hospitals and health plan to family and friends. •Feeling well-supported, respected and cared for throughout life.	**Lower health care costs for our customers as measured by:** •Cost trends that are at or below general inflation (Consumer Price Index, a leading economic indicator). •The best performing overall health care costs in the region. •HealthPartners clinics and hospitals will be in the best 10 percent in the region in overall costs of health care.

TRIPLE AIM: Health-Experience-Affordability

HealthPartners Clinics



Total Cost Index

(compared to statewide average)

< 1 is better than network average

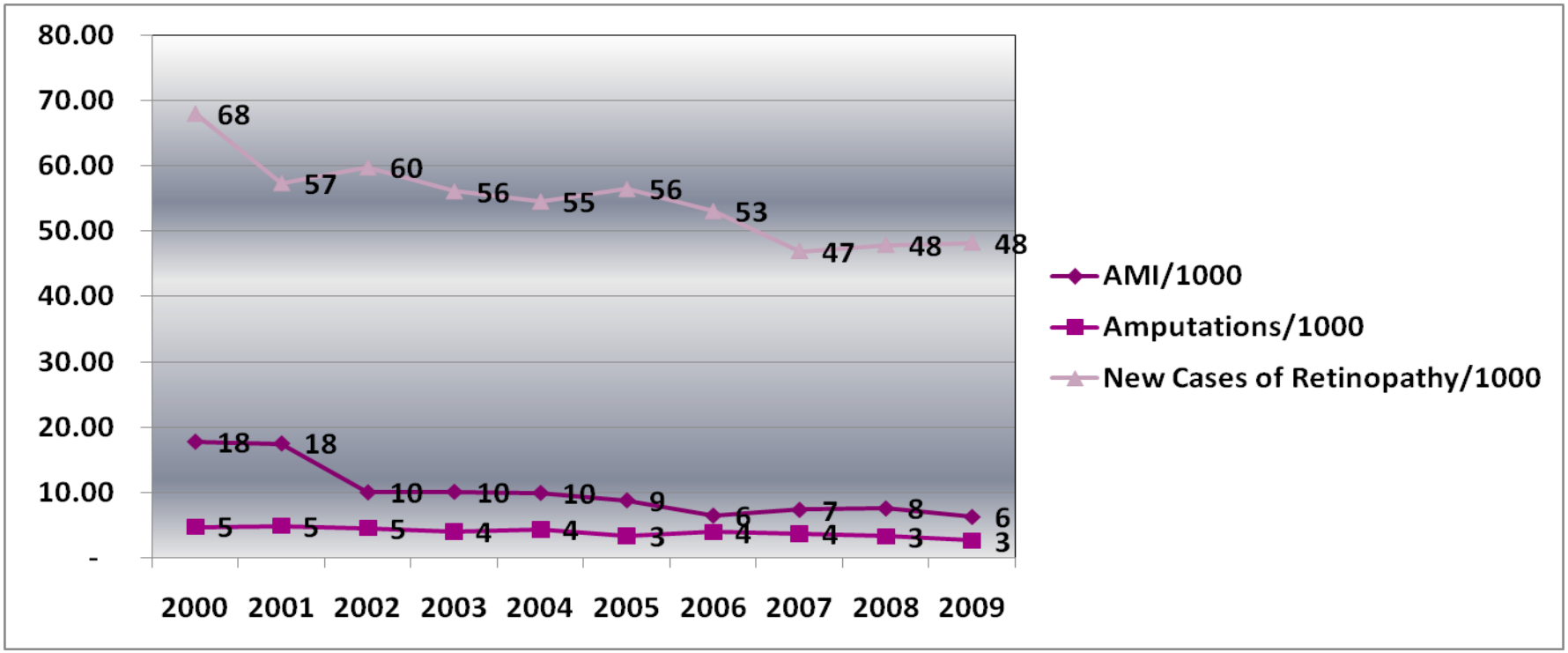
% patients with Optimal Diabetes Control*

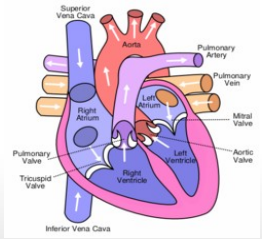
** controlled blood sugar (per ICSI guideline A1C changed from < 7 to < 8 in 1st quarter 2009), BP & cholesterol, AND daily aspirin use, AND non-tobacco user*

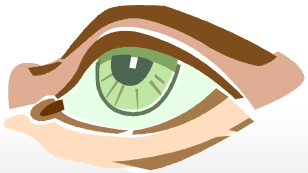
% patients "Would Recommend" HealthPartners Clinics

Saves 364 Hearts, 68 Legs & 625 Pairs of Eyes Each Year (Diabetic Population)

"HealthPartners"







	Building Will	Developing Ideas	Execution
R&D / Prototype Phase		**Concept Design / Driver Diagram, Diagnostic Tools, Measures & Design Targets, Prototype Testing Plan**	
Early Pilot Testing Phase	**New Concepts and Innovative Ideas: focus on building will in the innovators and early adopters (need 8 to 10 sites/orgs)**	**Promising Change Ideas (to reach the Aim / Design Targets)**	**Testing Components of the Concept Design and Testing Clusters of Components (may need more R&D)**
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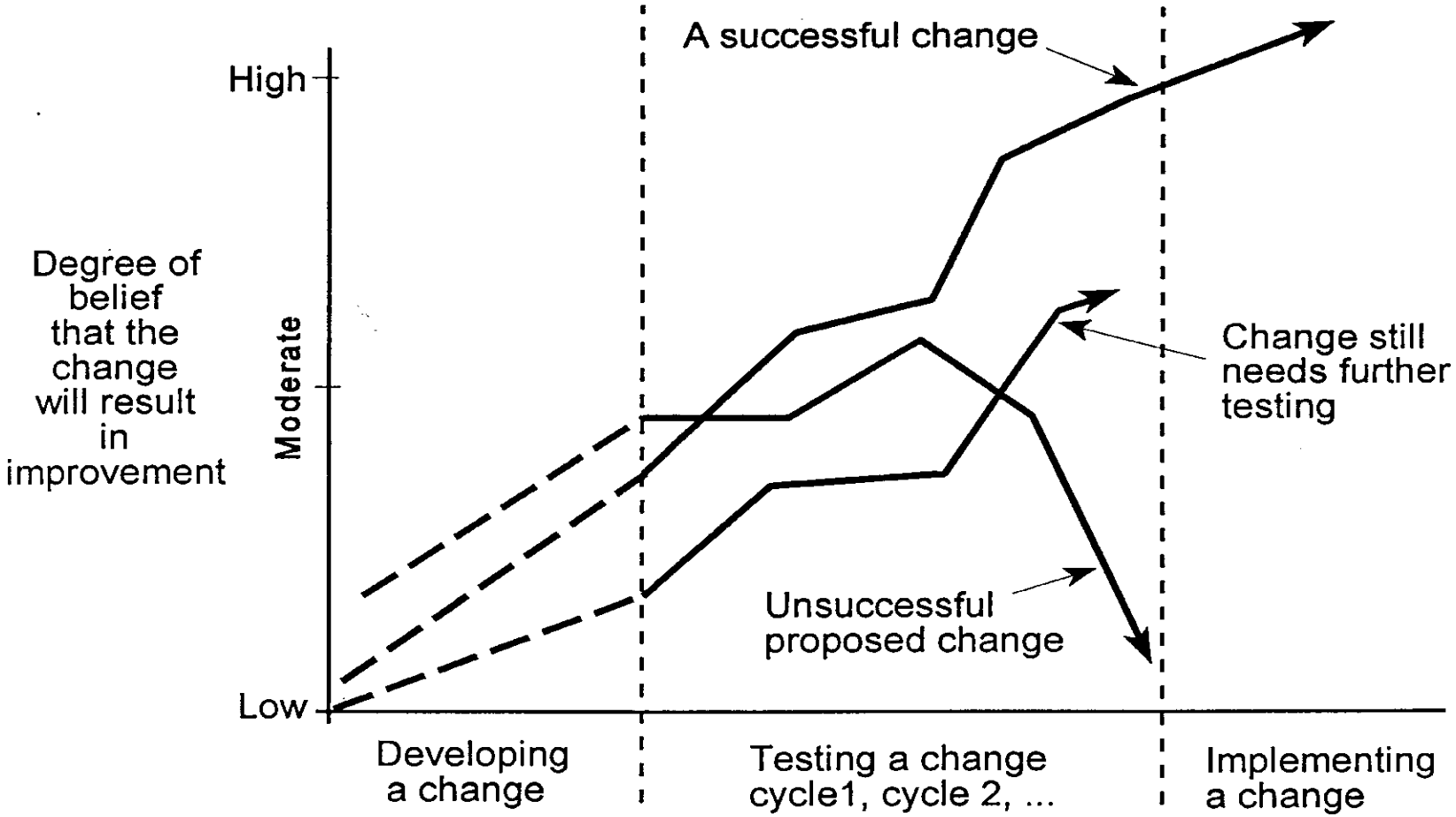
Full Scale	**Policies and Regulations: focus on building will for the late majority**	**How-to Guides & Protocols**	**Policies, Regulations and Payment Reform + Spread Resources and Models**

COLLABORATIVE MODEL

Degree of Belief that Changes Will Result in Improvement



The Improvement Guide, page 97

Why Test?

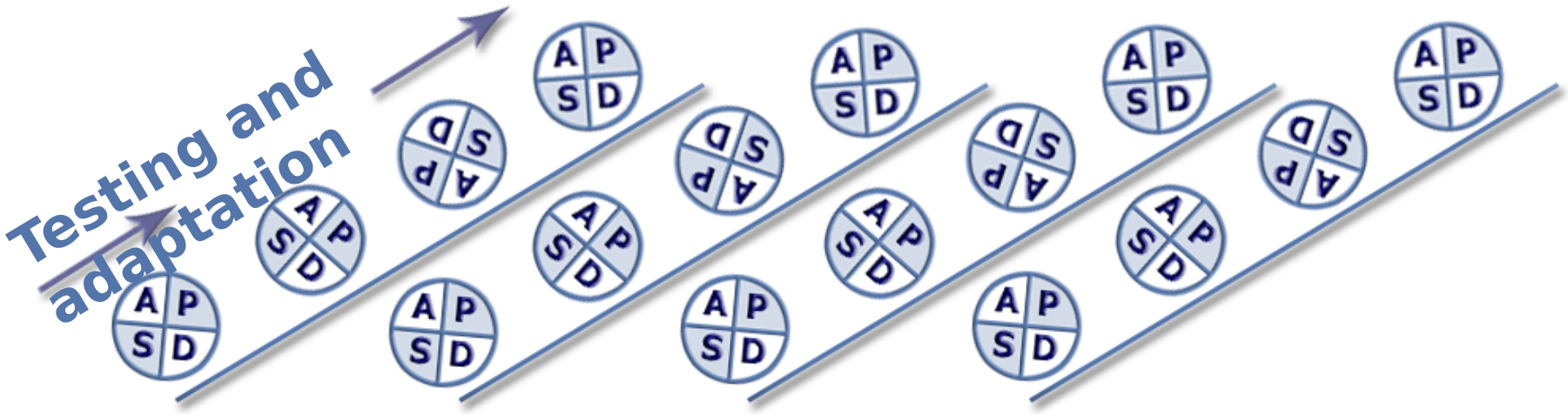
- Possible Objectives of PDSA Cycles for Testing
  - Increase your belief that the change will result in improvement
  - Opportunity for learning from “failures” without impacting performance
  - Document how much improvement can be expected from the change
  - Learn how to adapt the change to conditions in the local environment
  - Evaluate costs and side-effects of the change
  - Minimize resistance upon implementation

Deciding on the Scale of the Test

CURRENT SITUATION ORGANIZATION		CURRENT COMMITMENT WITHIN NO COMMITMENT	SOME COMMITMENT	STRONG COMMITMENT
Low degree of belief that change idea will lead to Improvement	**Cost of failure large**	*Very small-scale test*	*Very small-scale test*	*Very small-scale test*
	Cost of failure small	*Very small-scale test*	*Very small-scale test*	*Small-scale test*
High degree of belief that change idea will lead to Improvement	**Cost of failure large**	*Very small-scale test*	*Small-scale test*	*Large-scale test*
	Cost of failure small	*Small-scale test*	*Large-scale test*	*Implement*

Source: Langley et al., Improvement Guide

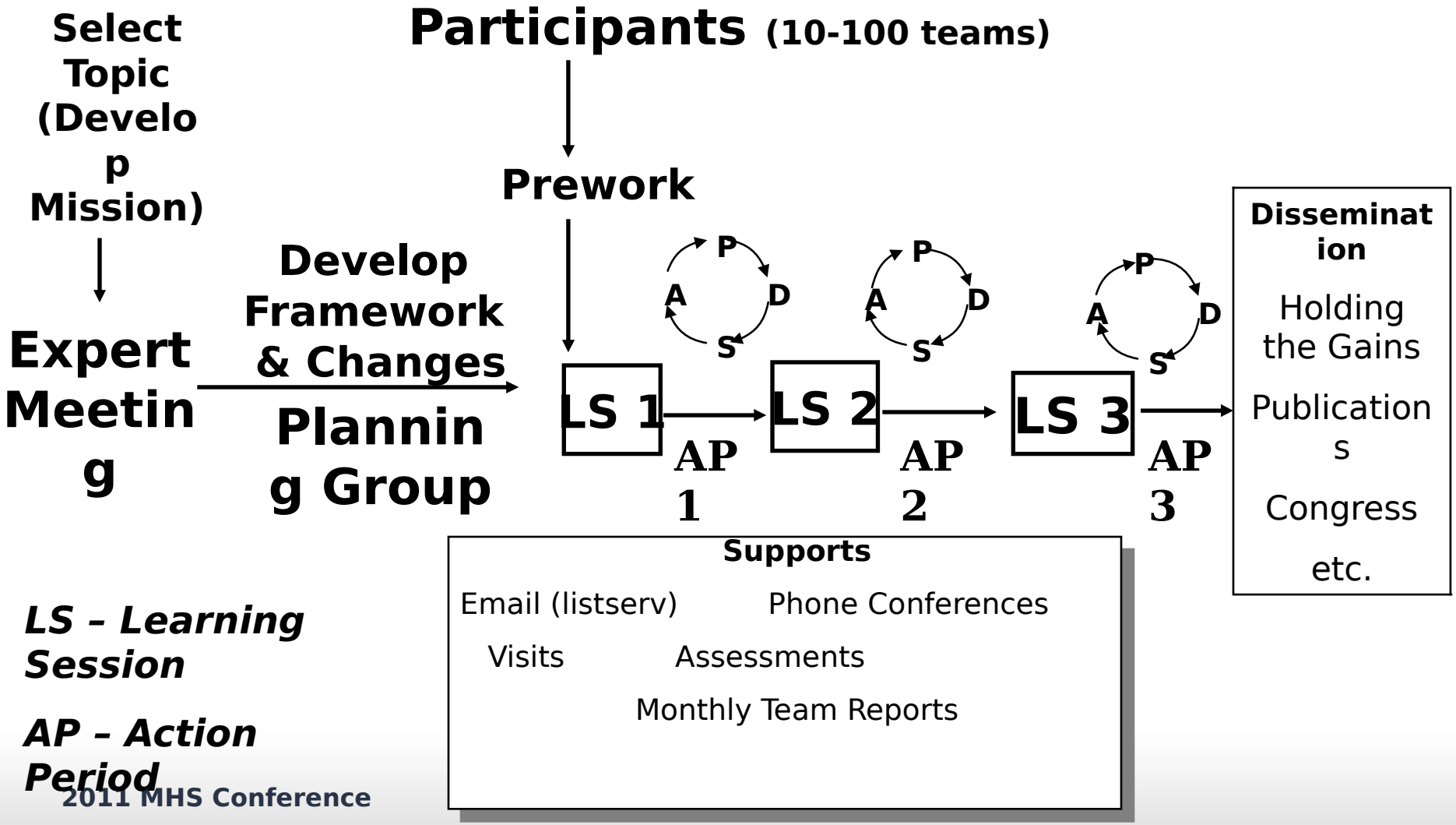
Multiple PDSA Cycle "Ramps"



Work Down Backlog | Match Supply and Demand | Manage the Constraint | Optimize Room and Equipment

Change Concepts

IHI Breakthrough Series (6 to 18 Months Time Frame)



SPREAD AND SCALE-UP

Developing a Spread Aim

- Spread What:
- Target Goals:
- Spread to Whom:
- Time Frame:

Sample Spread Aim: Prevent Ventilator Associated Pneumonia

- Spread What: Ventilator Bundle
- Target Goals: Zero Cases of VAP
- Spread to Whom: All ICUs in our 10 hospital system
- Time Frame: By September 2011

Adoption is a DOING thing!

"BETTER IDEAS"

COMMUNICATED

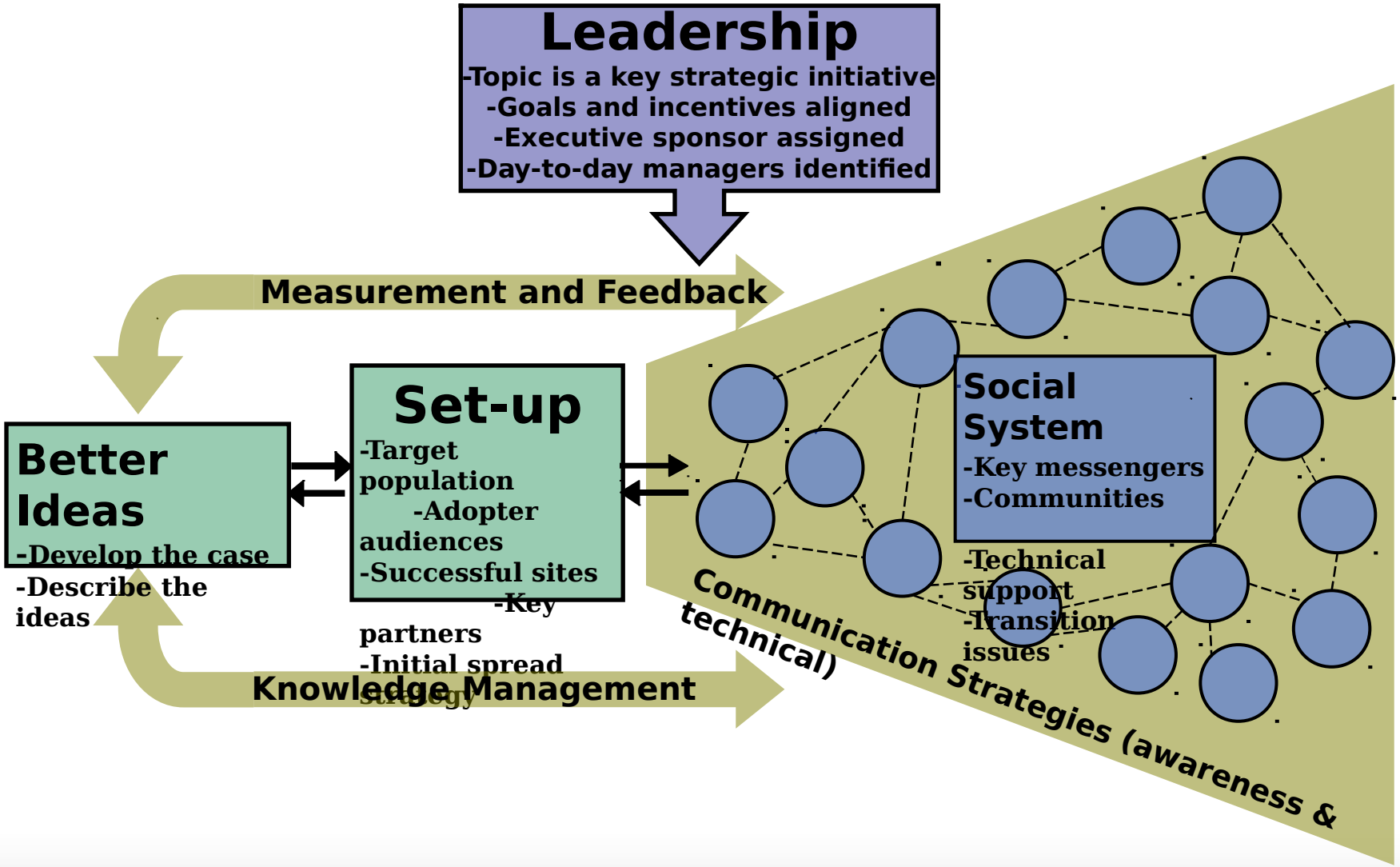
In a certain way

Thru a social system

Happens over time

Adapted from Rogers, 1995

A Framework for Spread



Methods for Spread

- Natural diffusion
- Breakthrough Series Collaborative model
- Extension agents
- Emergency mobilization
- Campaign model
- Social movements
- Wave sequence (wedge and spread)
- Broad and deep
- Hybrid models

The WAY We Communicate Matters

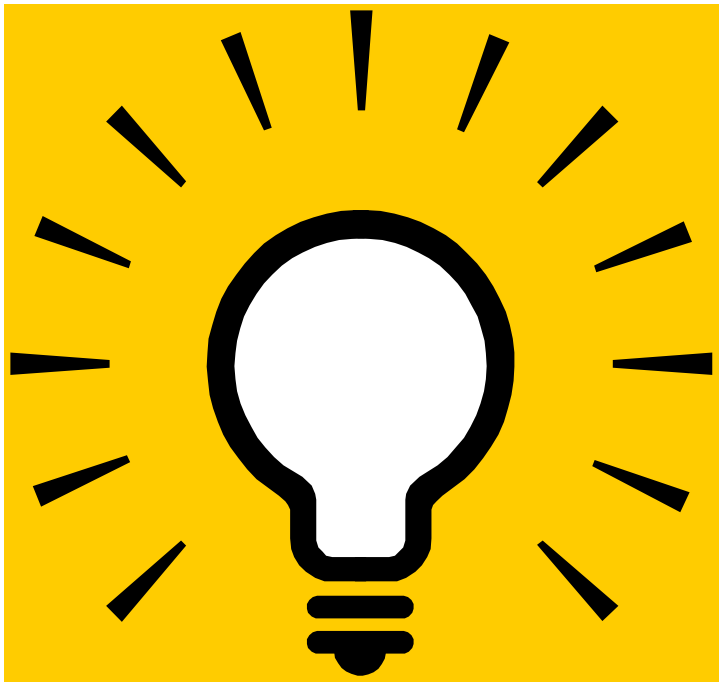
SHARE INFORMATION ← → **SHAPE BEHAVIOR**

General Publications	Personal Touch	Interactive Activities	Public Events	Face-to-face
flyers	letters	telephone	road shows	one-to-one
newsletters	cards	email	fairs	mentoring
videos	postcards	visits	conferences	seconding
articles		seminars	exhibitions	shadowing
posters		learning sets	mass mtgs	
		modeling		

Adapted from Ashkenas, 1995

What's the Message?

- Relative advantage
- Compatibility
- Complexity
- Trialability
- Observability



- Better Ideas

Spread Tracker

A=Planning B=Start C=In Progress D=Fully Implemented

	Pilot Unit 1	Pilot Unit 2	Spread Unit 1	Spread Unit 2	Spread Unit 3
Change 1	D	C	A	B	C
Change 2	D	C	B	B	C
Change 3	A	C	D	A	C
Change 4	D	C	B	A	B
Change 5	C	A	C	C	D
Change 6	C	D	C	C	A
Change 7	C	D	A	C	A
Change 8	C	B	A	C	D

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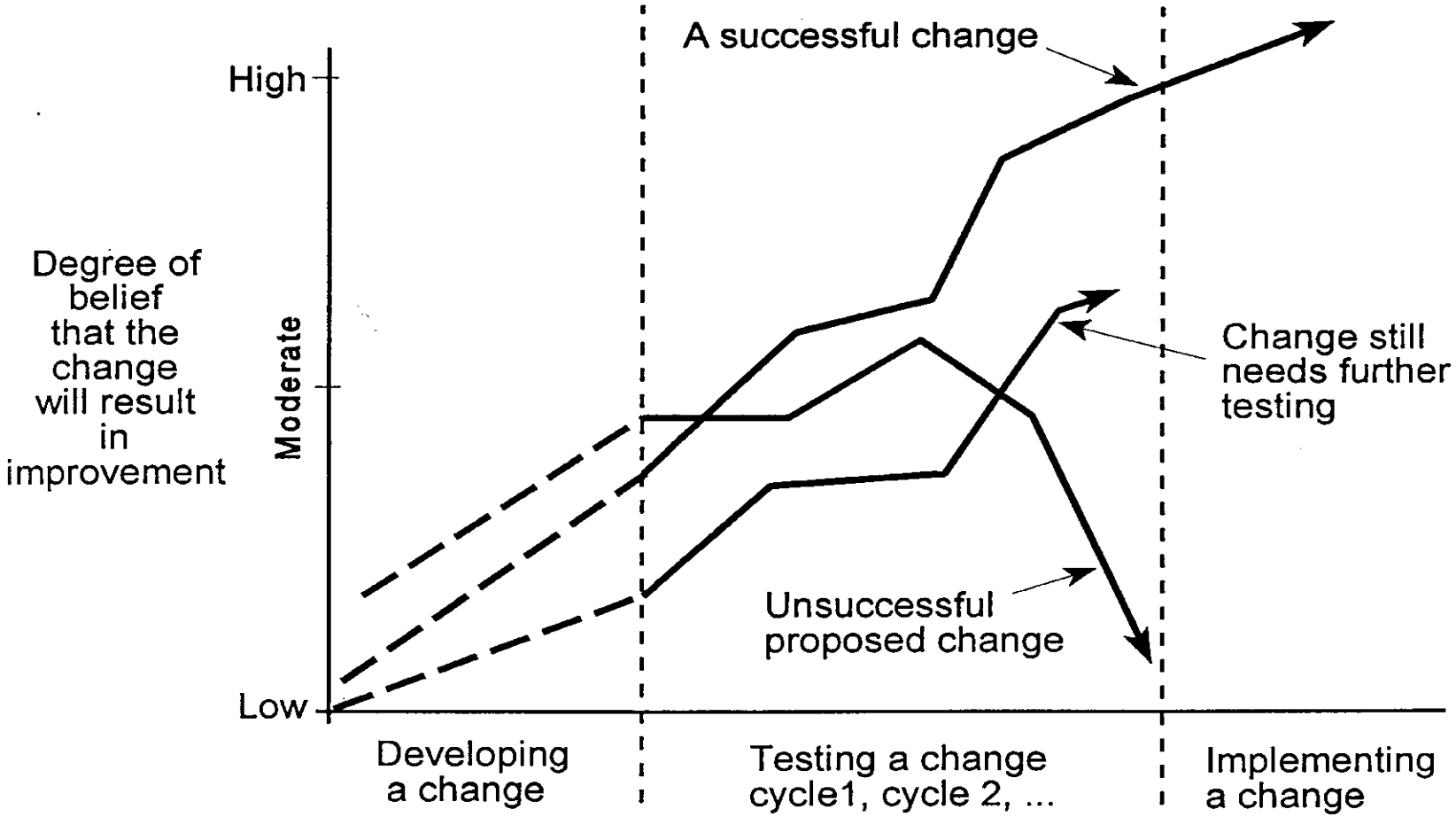
Full Scale	**Policies and Regulations: focus on building will for the late majority**	**How-to Guides & Protocols**	**Policies, Regulations and Payment Reform + Spread Resources and Models**

Degree of Belief that Changes Will Result in Improvement



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Thank You and More Information

- IHI: www.ihi.org
- The Improvement Guide, 2nd Edition, Langley, et al, John Wiley & Sons, 2009
- IHI White Papers: http://www.ihi.org/IHI/Results/WhitePapers/
  - 3. The Breakthrough Series
  - 11. A Framework for Spread
  - 17. Planning for Scale
- Guide to Idealized Design: http://www.ihi.org/IHI/Topics/ImprovementMethods/Literature/AGuidetoIdealizedDesign.htm